


Name: \_\_\_\_\_

1. A zombie bacteria strain will double in size every 30 minutes. If a person is infected with 20 bacteria and it takes about 2,621,440 for a person to become a zombie, how long will it take for a person to mutate into a zombie? Write a formula to represent this.	a) 68
2. A sequence of equilateral triangles is constructed. The first triangle has sides 14m in length. To get the second triangle, midpoints of the sides of the original triangle are connected. What is the length of each side of the 4 <sup>th</sup> triangle? 	b) 337.5
3. A growing deer population increases by 3 animals per year. If the current population is 35 animals, what will it be in 11 year?	c) 240
4. An infectious bacteria has leaked from a government facility. You discover that you are infected with 15 bacteria. You then discover that it doubles every 30 minutes. After 6 hours you will become contagious. How much of the strain of bacteria will you have?	d) 8.5
5. During a free fall, a skydiver falls 16 feet in the first second, 48 feet in the 2 <sup>nd</sup> second, and 80 feet in the third second. If she continues to fall at this rate, how many feet will she fall during the 8 <sup>th</sup> second?	e) 144
6. To prove that objects of different weights fall at the same rate, Galileo dropped the objects from the Leaning Tower of Pisa and they hit the ground at the same time. They fell about 16 ft in the 1 <sup>st</sup> second, 48 ft in the 2 <sup>nd</sup> second, and 80 ft in the 3 <sup>rd</sup> second. How many feet would they fall in the 5 <sup>th</sup> second?	f) 4132.21
7. If you have \$145 in your account at the beginning of week 13 and \$205 at the beginning of week 18, how much are you depositing weekly?	g) 46794.34

8. A culture of bacteria doubles every 30 minutes. There are currently 75 bacteria, how many would there be after 4 hours?	h) 12
9. Lets say you visit the Grand Canyon and drop a penny off the edge. The distance the penny will fall is 16 feet the first second, 48 feet the second, and 80 feet the third. What Is the distance the penny will fall in 7 seconds.	i) 208
10. Iodine-131 is a radioactive element used to study the thyroid gland. It takes approximately 8 days for half of a sample of Iodine-131 to decay into another element. How much of an 80-mg sample would be left after 32 days?	j) 0.32768
11. A population of fruit flies is growing in such a way that each generation is 1.5 times as large as the last. If there were 100 flies in the 1 <sup>st</sup> generation, how many would be in the 4 <sup>th</sup> generation?	k) 5
12. George's current salary is \$40,000. His annual pay raise is a percentage of his current salary. What would his salary be if he got four consecutive 4% pay raises?	l) 61,440
13. A one-ton ice sculpture is melting so that it loses 1/5 of its weight per hour. How much will be left after 5 hours? Write your answer in pounds.	m) 0.875
14. A colony of bacteria began with 200. It grows at a rate of 40% every 20 minutes. How many will there be in 3 hours?	n) 19,200